AEROMEDICAL PSYCHOLOGY

Duties and Functions of Aeromedical Psychologists

Aeromedical Psychology

- Definition
  - Application of clinical psychology principles, methods, and techniques in aviation and aviation medicine
  - Extension of military psychology involving elements of community and occupational health psychology

Aeromedical Psychology

- Requirements
  - Multiple clinical competencies
  - Broad training and skills
  - Aviation medicine and aviation training and experience

Core Competency Areas

- Clinical Assessment and Treatment
- Consultation
- Psychoeducation
- Aviation Mishap Investigations

Assessment and Treatment Tasks

- Evaluate crew members referred by command and/or flight surgeon
- Evaluate, monitor, and protect aircrew from psychological stresses of flight environment
- Provide psychotherapy to aircrew members
  - Relationship difficulties
  - Fear of flying
  - Stress management

Consultation Tasks

- Consult with commanders, safety officers, and flight surgeons on human factors affecting readiness, safety, performance, and retention of aviation personnel.
- Conduct CISD and provide psychological support following traumatic events.
- Survey unit stress, morale and cohesion and provide feedback to command.

Psychoeducation Tasks

- Educate and train aviation personnel in psychological factors affecting aircrew member readiness and mission completion.
  - stress management
  - fatigue and crew endurance
  - anger management
  - smoking cessation
  - communication skills training

Accident Investigation Tasks

- Serve as a member of the Aviation Mishap Board
- Conduct the human factors analysis segment of the mishap with the flight surgeon
- Conduct enhanced recall procedure

Training

- Army Aeromedical Psychology Training Course 6HF27
- Consultation during first year of practice
- Navy and Air Force Accident Investigation Training
- Civilian Enhanced Recall Training
  - Hypnosis training
  - Forensic hypnosis

QUESTIONS?

Consultation in Aviation and Aviation Medicine

Principles of Effective Consultation

- Credibility
- Competency/proficiency
- Accessibility
- Objectivity
- Motivation

Credibility

- Credibility is earned as a result of sustained effective performance
- Credibility is enhanced by
  - military experience
  - professionalism and military bearing
  - reputation
- Credibility requires
  - capacity to understand special needs
  - capacity to integrate into the environment

Competency

- Technical expertise
  - referral sources expect you to know your job
  - Maintain proficiency in relevant skills
- A competent consultant is
  - resourceful
  - innovative
  - informative

Accessibility

- Aviation consultation involves decision-making in real time with significant consequences
- Components of accessibility
  - visibility
  - availability
  - timeliness

Objectivity

- Provide information referral sources need to know rather than what they would like to hear
  - be decisive, diplomatic, direct
  - maintain integrity
  - maintain clear vision and be mindful of the broader issues

Objectivity

- Adopt an empirical attitude
  - present facts as you understand them
  - be prepared to defend you impressions
  - present alternative courses of action and consequences
  - don’t get invested in the outcome
  - critically evaluate your work
    - seek supervision, consultation, second opinions

Objectivity

- Maintain professional boundaries at all times
  - be clear of your role and stick to it
  - maintain neutrality

Motivation

- Effective consultants are personally committed to their roles
  - genuine interest in the work
  - invested in their performance
  - desire to be helpful
- Motivation and desire can compensate for inexperience

Enhanced Recall

Using Hypnosis to Refresh Recollection in Aircraft Accident Investigations

What is hypnosis?

- Increase in the ability to experience suggested alterations in perception, mood, and memory
  - changes are experienced as subjectively real
    - do not merely reflect behavioral compliance
  - individual temporarily relinquishes reality orientation and critical judgment
    - allows the hypnotist to orchestrate subjective experience

Why should memory be affected by hypnosis?

- Memory processes involve acquisition, retention, and retrieval
- Distortions occur in each phase of memory construction
  - acquisition- perceptual distortion, ablation
  - retention- fading, decay, reconstruction
  - retrieval- bias, decreased availability of relevant cues /cognitive strategies
- Memory is reconstructive not reproductive

How does hypnosis affect memory?

- Hypnosis acts to reinforce cognitive mechanisms in normal retrieval functions and/or provides alternative access to unrecovered memories

How does hypnosis affect memory?

- Possible mechanisms
  - hypnosis may increase image utilization and imagery related retrieval mechanisms
  - hypnosis may facilitate recall by elaborating images of the context in which the information was originally encoded
    - reconstructing contextual cues present during encoding may permit those same cues to guide the process of retrieval
    - reinstatement of affect associated with episodic events increases relevant retrieval cues

How does hypnosis affect memory?

- Possible mechanisms
  - hypnosis lowers the criterion for reporting and increases responding
    - individuals provide more uncertain items of information
  - hypnosis decreases anxiety
    - individuals may be more willing to think about and recall events
  - multiple retrieval attempts prior to hypnosis
    - better organization of recall and more efficient retrieval strategies

How useful is hypnosis in enhancing memory

- Hypnosis facilitates normal reconstructive processes of memory
  - hypnotic subjects can recall significantly more correct items (but also make 3X more error than nonhypnotic subjects)
  - hypnotic subjects report more peripheral details

How useful is hypnosis in enhancing memory?

- Hypnosis is more effective for contextually meaningful stimuli
  - personally or intrinsically meaningful
  - stories, pictures, thematic material

How reliable are hypnotically enhanced memories?

- Hypnotically enhanced memory is inherently unreliable
  - confabulation - fill in blanks
  - contamination - implanted details
  - crystallized beliefs - transforms post-event beliefs into experiences as accurate memory
- Hypnotic subjects can’t distinguish between hypnotic and waking memories

How reliable are hypnotically enhanced memories?

- Hypnotic subjects respond to previously uncertain responses with greater certainty
  - more confident of memory
- Hypnotic subjects provide more detail, and previously unrecalled information leading to an illusion of credibility

Why use hypnosis?

- Hypnosis can be helpful in recovering memories previously unrecalled
- Use of hypnosis requires considerable skill in hypnotic interviewing
- Requires preparation of investigation board and subjects
  - realistic expectations based upon circumstances and hypnotizability

Why use hypnosis?

- Witness recall without hypnosis is impacted by many of the same issues
- Hypnotically refreshed recollections should never stand on their own
  - must be corroborated by independent physical evidence
  - plausible hypotheses developed by the accident investigation board